

TABLE OF PERIODIC PROPERTIES OF THE ELEMENTS

Percent Ionic Character of a Single Chemical Bond

Difference in electronegativity	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
Percent ionic character %	0.5	1	2	4	6	9	12	15	19	22	26	30	34	39	43	47	51	55	59	63	67	70	74	76	79	82	84	86	88	89	91	92

GROUP 1A

Symbol	Atomic Number	Atomic Weight	Electronegativity	Ionization Potential (eV)	Electron Configuration	Crystal Structure	Atomic Radius (Å)	Covalent Radius (Å)	Van der Waals Radius (Å)	Density (g/cm³)	Melting Point (°C)	Boiling Point (°C)	Heat of Fusion (kJ/mol)	Heat of Vaporization (kJ/mol)	Specific Heat Capacity (J/g·K)
H	1	1.008	2.20	13.6	1s¹	None	37	31	53	0.08988	-252.87	-252.87	0.082	0.91	0.010
Li	3	6.941	0.98	5.39	1s² 2s¹	BCC	152	128	201	0.534	180.5	1347	1.03	171	0.96
Na	11	22.990	0.93	5.14	1s² 2s² 2p⁶ 3s¹	BCC	186	166	227	0.971	97.8	883	2.27	109	1.28
K	19	39.098	0.82	4.19	1s² 2s² 2p⁶ 3s² 3p⁶ 4s¹	BCC	227	203	273	0.862	63.5	759	2.35	97	1.24
Rb	37	85.468	0.82	4.18	1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 4p⁶ 5s¹	BCC	248	223	298	1.295	39.3	688	2.63	86	1.27
Cs	55	132.905	0.79	3.89	1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 4p⁶ 5s² 5p⁶ 6s¹	BCC	265	240	319	1.93	28.4	671	2.92	81	1.27
Fr	87		0.7	3.44	1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 4p⁶ 5s² 5p⁶ 6s² 6p⁶ 7s¹	BCC	272	247	324	4.88	27	640	3.1	78	1.27

DATA CONCERNING THE MORE STABLE ELEMENTARY (SUBATOMIC) PARTICLES

Symbol	Neutron	Proton	Electron	Neutrino	Photon
n	1.67493 × 10⁻²⁷	1.67262 × 10⁻²⁷	9.10938 × 10⁻³¹	0	0
m	1.008665	1.007276	5.48580 × 10⁻⁴	0	0
Charge (C)	0	1.60219 × 10⁻¹⁹	-1.60219 × 10⁻¹⁹	0	0
Radius (m)	8 × 10⁻¹⁶	8 × 10⁻¹⁶	< 1 × 10⁻¹⁶	0	0
Spin quantum number	1/2	1/2	1/2	1/2	1
Magnetic Moment†	-1.913 μ _N	2.793 μ _N	1.001 μ _B	0	0

* The positron (e⁺) has properties similar to those of the negative electron or beta particle except that its charge has opposite sign (+). The antineutrino (ν̄) has properties similar to those of the neutrino except that its spin (or helicity) is opposite in relation to its direction of propagation. † The mass of an electron in radiative β (beta) decay, whereas a neutrino occupies the place of a positron in β⁺ decay.

† μ_B = Bohr magneton and μ_N = Nuclear magneton.

VIII

He	Ne	Ar	Kr	Xe	Rn
2	10	18	36	54	86
4	20	36	54	72	100
6	30	50	72	92	120
8	40	68	96	124	160
10	50	84	118	152	190
12	60	100	136	180	220
14	70	112	152	208	260
16	80	120	164	224	280
18	90	128	176	240	300
20	100	136	188	256	320
22	110	144	196	272	340
24	120	152	204	288	360
26	130	160	212	304	380
28	140	168	220	320	400
30	150	176	228	336	420
32	160	184	236	352	440
34	170	192	244	368	460
36	180	200	252	384	480
38	190	208	260	400	500
40	200	216	268	416	520
42	210	224	276	432	540
44	220	232	284	448	560
46	230	240	292	464	580
48	240	248	300	480	600
50	250	256	308	496	620
52	260	264	316	512	640
54	270	272	324	528	660
56	280	280	332	544	680
58	290	288	340	560	700
60	300	296	348	576	720
62	310	304	356	592	740
64	320	312	364	608	760
66	330	320	372	624	780
68	340	328	380	640	800
70	350	336	388	656	820
72	360	344	396	672	840
74	370	352	404	688	860
76	380	360	412	704	880
78	390	368	420	720	900
80	400	376	428	736	920
82	410	384	436	752	940
84	420	392	444	768	960
86	430	400	452	784	980
88	440	408	460	800	1000
90	450	416	468	816	1020
92	460	424	476	832	1040
94	470	432	484	848	1060
96	480	440	492	864	1080
98	490	448	500	880	1100
100	500	456	508	896	1120
102	510	464	516	912	1140
104	520	472	524	928	1160
106	530	480	532	944	1180
108	540	488	540	960	1200
110	550	496	548	976	1220
112	560	504	556	992	1240
114	570	512	564	1008	1260
116	580	520	572	1024	1280
118	590	528	580	1040	1300
120	600	536	588	1056	1320
122	610	544	596	1072	1340
124	620	552	604	1088	1360
126	630	560	612	1104	1380
128	640	568	620	1120	1400
130	650	576	628	1136	1420
132	660	584	636	1152	1440
134	670	592	644	1168	1460
136	680	600	652	1184	1480
138	690	608	660	1200	1500
140	700	616	668	1216	1520
142	710	624	676	1232	1540
144	720	632	684	1248	1560
146	730	640	692	1264	1580
148	740	648	700	1280	1600
150	750	656	708	1296	1620
152	760	664	716	1312	1640
154	770	672	724	1328	1660
156	780	680	732	1344	1680
158	790	688	740	1360	1700
160	800	696	748	1376	1720
162	810	704	756	1392	1740
164	820	712	764	1408	1760
166	830	720	772	1424	1780
168	840	728	780	1440	1800
170	850	736	788	1456	1820
172	860	744	796	1472	1840
174	870	752	804	1488	1860
176	880	760	812	1504	1880
178	890	768	820	1520	1900
180	900	776	828	1536	1920
182	910	784	836	1552	1940
184	920	792	844	1568	1960
186	930	800	852	1584	1980
188	940	808	860	1600	2000
190	950	816	868	1616	2020
192	960	824	876	1632	2040
194	970	832	884	1648	2060
196	980	840	892	1664	2080
198	990	848	900	1680	2100
200	1000	856	908	1696	2120
202	1010	864	916	1712	2140
204	1020	872	924	1728	2160
206	1030	880	932	1744	2180
208	1040	888	940	1760	2200
210	1050	896	948	1776	2220
212	1060	904	956	1792	2240
214	1070	912	964	1808	2260
216	1080	920	972	1824	2280
218	1090	928	980	1840	2300
220	1100	936	988	1856	2320
222	1110	944	996	1872	2340
224	1120	952	1004	1888	2360
226	1130	960	1012	1904	2380
228	1140	968	1020	1920	2400
230	1150	976	1028	1936	2420
232	1160	984	1036	1952	2440
234	1170	992	1044	1968	2460
236	1180	1000	1052	1984	2480
238	1190	1008	1060	2000	2500
240	1200	1016	1068	2016	2520
242	1210	1024	1076	2032	2540
244	1220	1032	1084	2048	2560
246	1230	1040	1092	2064	2580
248	1240	1048	1100	2080	2600
250	1250	1056	1108	2096	2620
252	1260	1064	1116	2112	2640
254	1270	1072	1124	2128	2660
256	1280	1080	1132	2144	2680
258	1290	1088	1140	2160	2700
260	1300	1096	1148	2176	2720
262	1310	1104	1156	2192	2740
264	1320	1112	1164	2208	2760
266	1330	1120	1172	2224	2780
268	1340	1128	1180	2240	2800
270	1350	1136	1188	2256	2820
272	1360	1144	1196	2272	2840
274	1370	1152	1204	2288	2860
276	1380	1160	1212	2304	2880
278	1390	1168	1220	2320	2900
280	1400	1176	1228	2336	2920
282	1410	1184	1236	2352	2940
284	1420	1192	1244	2368	2960
286	1430	1200	1252	2384	2980
288	1440	1208	1260	2400	3000
290	1450	1216	1268	2416	3020
292	1460	1224	1276	2432	3040
294	1470	1232	1284	2448	3060
296	1480	1240	1292	2464	3080
298	1490	1248	1300	2480	3100
300	1500	1256	1308	2496	3120
302	1510	1264	1316	2512	3140
304	1520	1272	1324	2528	3160
306	1530	1280	1332	2544	3180
308	1540	1288	1340	2560	3200
310	1550	1296	1348	2576	3220
312	1560	1304	1356	2592	3240
314	1570	1312	1364	2608	3260
316	1580	1320	1372	2624	3280
318	1590	1328	1380	2640	3300
320	1600	1336	1388	2656	3320
322	1610	1344	1396	2672	3340
324	1620	1352	1404	2688	3360
326	1630	1360	1412	2704	3380
328	1640	1368	1420	2720	3400
330	1650	1376	1428	2736	3420
332	1660	1384	1436	2752	3440
334	1670	1392	1444	2768	3460
336	1680	1400	1452	2784	3480
338	1690	1408	1460	2800	3500
340	1700	1416	1468	2816	3520
342	1710	1424	1476	2832	3540
344	1720	1432	1484	2848	3560
346	1730	1440	1492	2864	3580
348	1740	1448	1500	2880	3600
350	1750	1456	1508	2896	3620
352	1760	1464	1516	2912	3640
354	1770	1472	1524	2928	3